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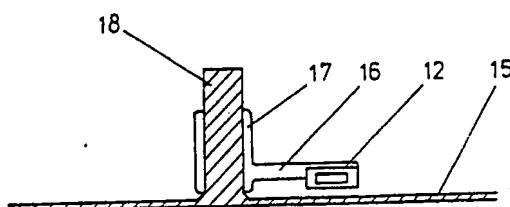
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U1S S2055

(56) Documents cited  
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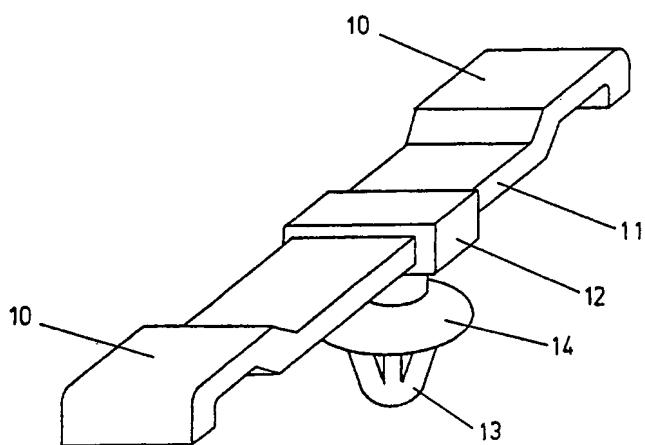
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**(54) Fixing device**

(57) A fixing device for fixing cable harnesses etc to panels or other structures, having an elongate element 11 which can be secured to the harness at 10. A fastening element 14 is fitted to the elongate element via a portion 12 which is moveable longitudinally relative to the elongate element. The fastening element is formed with a projection 13 or a socket 17 for fixing it to the panel.



**FIG. 4**



**FIG. 5**

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.  
The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

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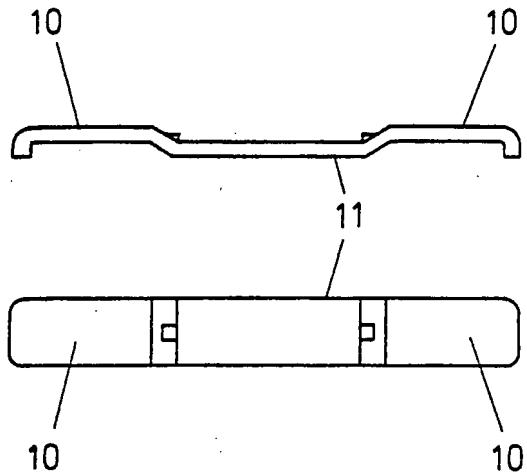


FIG. 1

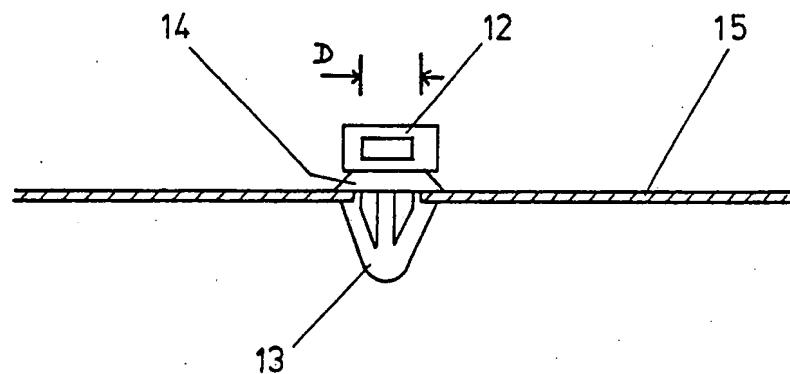


FIG. 2

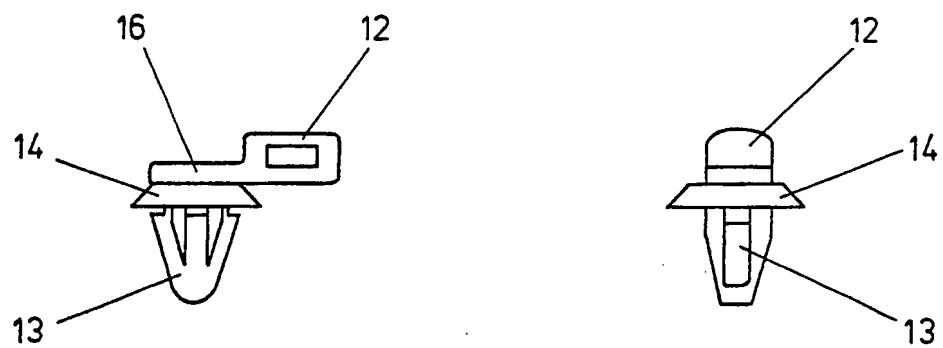


FIG. 3

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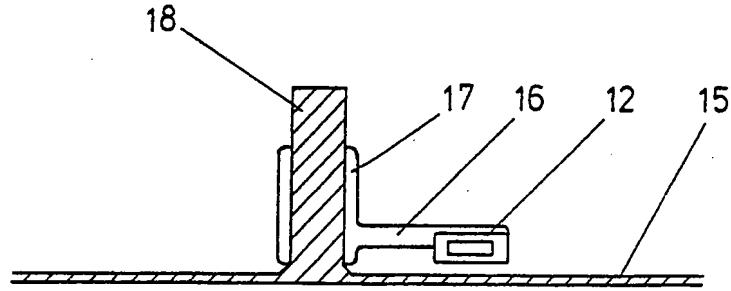


FIG. 4

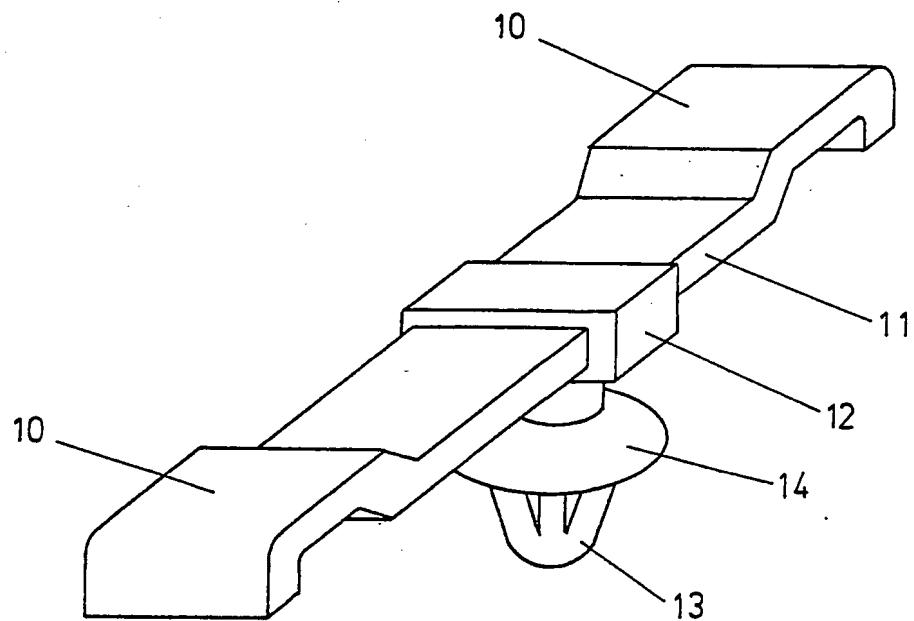


FIG. 5

HARNESS FIXING DEVICE

This invention relates to a device for fixing a cable harness or other elongate body to a panel or other structure.

A current system widely used in securing a cable harness to panels is to employ a "coathanger" fixing device having an elongate portion which is taped onto the harness by the harness manufacturer. The harness is then secured into position by passing integral arrow head clips of the fixing devices through mating holes drilled in the panels. If the holes are not in alignment with the taped on fixing devices, problems occur in securing the harness into position. This is a problem often encountered in the automotive industry.

In accordance with this invention, there is provided a fixing device comprising an elongate element which can be secured to an elongate body, and a fastening element movable longitudinally relative to the elongate element.

In use the elongate element is positioned against the harness or other elongate body and generally parallel thereto, and is then secured to the harness for example by taping the opposite ends of the elongate element to the harness. Then in fixing the harness to a panel or other structure, the fastening element can be moved longitudinally relative to the elongate element in order to align it with fixing points of the pane etc.

The elongate element and fastening element of the fixing device may be formed as two separate parts engaged together, the fastening element being slidable along the elongate element. In this case the elongate element may be slidable through an eyelet in the fastening element.

The fastening element may comprise a projection for insertion into a hole in a panel. Preferably this projection comprises a non-return clip e.g. of arrowhead type.

The fastening element may however be formed with other means for fixing it to a panel or other structure. As one example it may comprise a tubular portion for push-fitting over a projecting stud on the panel etc. As another example it may comprise an apertured portion enabling it to be fixed to the panel etc by means of a rivet, screw etc.

The fixing device may be arranged so that the elongate element lies on the axis of the projecting clip or other means of fixing the fastening element to the panel etc. Instead however the fastening element may be arranged to position the elongate element radially outwards (or off set from) the axis of the projecting clip etc.

Embodiments of this invention will now be described by way of examples only and with reference to the accompanying drawings, in which

FIGURE 1 comprises side and plan views of a tape bar of a harness fixing device;

FIGURE 2 is a view of an in-line arrowhead clip fastening element;

FIGURE 3 comprises side and end views of an offset arrowhead clip fastening element;

FIGURE 4 is a view of an offset fastening element for threaded welded studs.

FIGURE 5 is a view of an in line arrowhead clip fastening element attached to the tape bar of figure 1.

Referring to figure 1, there is shown a tape bar for fixing longitudinally to a harness. The tape bar comprises two flat raised portions 10 at either end, which will be secured to the harness e.g. by taping, and a flat central lower portion 11 which is displaced out of the plane of the end portions. The distance of displacement is large enough to allow one of the fastenings shown in figures 2, 3 and 4 to be freely moved along the bar when the latter has its ends fixed to the harness, allowing securement to displaced holes or pegs on the panel to which it is to be fixed.

Referring to figure 2, there is shown an in-line fastening element comprising an arrowhead clip 13 for passing through a hole of diameter D in a panel 15, a radial clip plate 14 for retaining the clip at right angles to the plane of the panel 15 and an eyelet 12 having a rectangular hole through which the tape bar 10, 11 of figure 1 can be inserted, as shown in figure 5.

Referring to figure 3, there is shown an offset fastening element comprising an arrowhead clip 13 for passing through a hole in the panel 15, a radial cup plate 14, a connecting bar 16 projecting radially relative to the axis of the arrowhead clip 13 and having an eyelet 12 at its outer end. This offset fastening element may be used in circumstances when the hole in the panel is displaced laterally in relative to the axis of the harness. Any longitudinal misplacement of the holes can be overcome by sliding the fastening element along the tape bar 10, 11.

Referring to figure 4 there is shown an offset fastening element comprising a hollow tube 17 with annular grooves on its inner surface, for fixing to a threaded stud 18 welded to a panel 15 and a radially projecting connecting bar 16 having an eyelet 12 at its outer end.

The annular grooves in the hollow tube 17 are so arranged that the fastening element forms a non-return push fit with the threaded stud 18. Any longitudinal displacement of the stud can be overcome by moving the eyelet 12 longitudinally along the tape bar 10, 11.

Further embodiments may include fastening elements arranged to be fixed to panels or other structure using nuts and bolts, screws, rivets and "T" studs, all of which fastening elements can be either of the in-line or off-set type. Moulded ties may also be used instead of tape to secure the bar 10, 11 to the harness. Further the fastening element may be arranged so that it can be removed from the tape bar 10, 11 once the latter has been secured to the harness, to allow another

type of fastening element to be attached to the tape bar 10, 11  
in its place.

Claims

1. A fixing device comprising an elongate element which can be secured to an elongate body, and a fastening element moveable longitudinally relative to the elongate element.
- 5 2. A fixing device as claimed in claim 1 in which the elongate element is slidable through an eyelet in the fastening element.
- 10 3. A fixing device as claimed in claims 1 or 2 in which the fastening element comprises a projection for insertion into a hole in a panel or other structure.
- 15 4. A fixing device as claimed in claim 3 in which the projection comprises a non-return clip.
- 20 5. A fixing device as claimed in claims 1 or 2 in which the fastening element comprises a tubular portion for push-fitting over a projecting stud on a panel or other structure.
- 25 6. A fixing device as claimed in claims 1 or 2 in which the fastening element comprises an apertured portion enabling it to be fixed to the panel or other structure by means of a rivet, screw etc.
- 30 7. A fixing device as claimed in any one of claims 3 to 6 in which the fastening element is arranged to position the elongate element radially outwards therefrom.
- 35 8. A fixing device as claimed in any preceding claim in which the elongate element comprises two flat raised portions at either end.
9. A fixing device as claimed in any preceding claim in which the elongate element further comprises moulded ties to secure it to a cable harness or other elongate body.
10. A fixing device as claimed in any preceding claim in

which the fastening element is removable from the elongate element, once the latter has been secured to the harness or other elongate body.

- 5 11. A fixing device substantially as herein described with reference to the accompanying drawings.